



**PRE-APPEAL BRIEF REQUEST FOR
REVIEW**

Docket Number 023895/258393

(filed with the Notice of Appeal)

Application Number 10/084,313

Filed 02/28/2002

First Named Inventor Clarke, et al.

Art Unit 3661

Examiner Cuong H. Nguyen

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 19, 2006.

Lisa Rone

REASONS FOR REQUESTING PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicants in the above-identified patent application hereby request review of the Official Action dated January 27, 2006, rejecting Claims 1-44 of the above-identified application. This request is being filed concurrent with a Notice of Appeal, and no amendments are being filed herewith.

The final Official Action rejects independent Claims 1 and 15 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,571,171 to Pauly in view of U.S. Patent No. 6,163,744 to Onken et al. and further in view of U.S. Patent No. 6,134,500 to Tang et al. In addition, the Official Action rejects independent Claims 29 and 35 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,943,919 to Aslin in view of the Onken '744 patent. As explained below, however, Applicants respectfully submit that the claimed invention is patentably distinct from the cited references and request reconsideration and reversal the aforementioned rejection.

Independent Claims 1 and 15 of the present application include determining a proposed pre-flight assignment for the aircraft based on a generated aircraft routing proposal and complying with the information describing the possible flight of the aircraft (e.g., flight, aircraft, or maintenance information) and a plurality of operational and maintenance constraints. The aircraft routing proposal is typically a flight network that represents an airline schedule for a particular aircraft. Furthermore, the specification of the present application states that the proposed flight assignment represents the assignment of aircraft to flights and may include a sequence of flights and/or ground arcs (i.e., routes) satisfying operational and maintenance constraints. See page 18, ¶ 38. Accordingly, it is apparent that several variables are utilized to determine a proposed pre-flight assignment for the aircraft.

The Examiner finds that “although the cited references use different terms (e.g., flight planning instead of ‘flight assignment’), they comprise the same claimed functions since [the] cited prior art teach[es] about flight management service (i.e., including flight planning, maintenances, routing schedules – everything that requires FMS.” Moreover, “the examiner submits that there is no distinguishing between pre-flight assignment or proposed preflight assignment compare[ed] to flight planning – merely claiming [the] same functions.” In addition, the Examiner acknowledges in the Official Action that “[n]either Pauly nor Onken expressly disclose about determination of a proposed pre-flight assignment,” but believes that Pauly and

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Onken inherently suggest this particular aspect of Claims 1 and 15. The Examiner also contends that Tang discloses determining a proposed pre-flight assignment at col. 1, lines 58-67.

Applicants refer to the previous Amendment dated February 24, 2005 for a discussion of the Pauly '171 and Onken '744 patents and the Amendment dated July 28, 2005 for a general discussion of the Tang '500 patent.

In contrast to the disclosures of the Pauly '171, Onken '744, and Tang '500 patents, independent Claims 1 and 15 of the present application recite determining a proposed pre-flight assignment or generating a flight assignment plan for the aircraft based on the proposed pre-flight assignment. Applicants submit that there is distinct difference between flight assignment and flight planning. In this regard, flight or tail assignment, as known to those of ordinary skill in the art, is concerned with determining which individual aircraft should be assigned to a particular flight based on operational and maintenance constraints of the aircraft and is focused on the ability to operate the schedule. In contrast, those of skill in the art understand flight planning to relate to the particulars of a specific route, such as altitude and speed. For example, Applicants refer the Examiner to the "Flight String Models for Aircraft Fleeting and Routing" article submitted in an Information Disclosure Statement on August 26, 2004, which distinguishes fleet assignment (a more generalized form of flight assignment on a fleet basis) and aircraft routing, i.e., flight planning. The Abstract of the Flight String article states that:

Given a schedule of flight legs to be flown by an airline, the *fleet assignment* problem is to determine the minimum cost assignment of flights to aircraft types, called fleets, such that each scheduled flight is assigned exactly to one fleet and the resulting assignment is feasible to fly given a limited number of aircraft in each fleet. Then, the airline must determine a sequence of flights, or routes to be flown by individual aircraft such that assigned flights are included in exactly one route and all aircraft can be maintained as necessary. This is referred to as the *aircraft routing* problem.

Moreover, the attached printout from a Google search defines a "flight plan" as: "A detailed statement of the intended route, altitude, and time of a proposed aircraft flight. Most flight plans also include notation of existing and forecast weather conditions at destination (and alternate airport, if required) as well as airspeed and ground speed estimates." Therefore, Applicants submit that there is a distinct difference between a flight assignment and flight planning/routing.

In contrast to the claim recitations relating to pre-flight and flight assignments, both the Pauly '171 and Onken '744 patents are directed to flight planning. In this regard, both the Pauly '171 and Onken '744 patents are directed to the modification of a route for a particular aircraft while the aircraft is in flight. For instance, the Pauly '171 patent discloses "inserting a waypoint into a preexisting flight plan . . . and automatically generating a proposed changed flight plan based upon inserting the waypoint into the nearest leg of the flight plan" (Abstract) (emphasis added). Similarly, the Onken '744 patent discloses "automatically correct[ing] an originally planned aircraft flight after flight-relevant parameters are changed" (Abstract) (emphasis added). Thus, both the Pauly '171 and Onken '744 patents are directed to modifying an existing flight plan. As a result, Applicants submit that it is clear that neither the Pauly '171 nor Onken '744 patents teach or suggest determining a pre-flight assignment and or generating a flight assignment plan for an aircraft as recited in independent Claims 1 and 15.

The Tang '500 patent shares similar shortcomings as the Pauly '171 and Onken '744 patents and is fundamentally different than independent Claims 1 and 15 of the present application. Namely, the Tang '500 patent also does not disclose determining a pre-flight assignment for an aircraft or generating a flight assignment plan for the aircraft using the proposed flight assignment that meets a decision criteria, as recited by the claimed invention. The Examiner relies on a portion of the Tang '500 patent that defines flight planning as the "primary activity that determines the airline operations and all other operational issues, such as irregular operations, flight cancellations, maintenance routing and gate planning, and ties in as peripheral activities to the flight planning process." See Col. 1, lines 58-63.

In contrast and as described above, flight planning, is directed to the details of a particular flight or route, without consideration for the particular aircraft or tail that will be assigned to the route. As described in the Tang '500 patent, "[a] flight plan is a document that lays out the ground route between take-off and landing, the altitude levels to be flown and the speed schedule of the aircraft throughout the flight." See Col. 1, lines 18-21. Thus, flight planning relates to the particulars of the flight itself and is used as one of many variables in the flight assignment process. The Tang '500 patent discloses flight planning and, thus, is distinguishable from independent Claims 1 and 15 of the present application for at least this reason.

In light of the reasons set forth above, Applicants respectively submit that the rejection of independent Claims 1 and 15, and those claims that depend therefrom, under 35 U.S.C. § 103(a) is overcome.

Independent Claims 29 and 35 are rejected under 35 U.S.C. § 103(a) over the combination of the Aslin '919 and Onken '744 patents. Independent Claims 29 and 35 recite receiving information describing a possible flight of an aircraft, wherein the information includes maintenance and operational constraints that are tail specific, and generating a flight network for the aircraft from the received information, wherein the flight network represents a schedule for the aircraft. Thus, the flight network may show the possible flights for an aircraft that satisfy maintenance and operational constraints (*see e.g.*, ¶ 29 and Figure 3 of the present application).

The Examiner finds that the Aslin '919 patent discloses each of the recitations of independent Claims 29 and 35 except determining an aircraft routing proposal for the aircraft that satisfies the received information. However, the Examiner finds that the Onken '744 patent overcomes the Aslin '919 patent's shortcomings such that the combination of references discloses Claims 29 and 35.

Applicants respectfully disagree, as the Aslin '919 patent does not disclose receiving information describing a possible flight of the aircraft, wherein the information includes maintenance and operational constraints that are tail specific, as recited by independent Claims 29 and 35. In particular, the Examiner indicates that the Aslin '919 patent discloses operational constraints ("the LRU fault data is considered to be the operational constraint") but does not state that maintenance constraints that are tail specific (i.e., for a specific aircraft) are disclosed. Applicants submit that the Aslin '919 patent does not disclose maintenance constraints (e.g., number of cycles or flying time between maintenance checks) that are specific for a particular aircraft. Rather, LRU fault data simply relates to data that requires crew awareness, "such as a valve or pump," "switch or relay," or "autopilot or an inertial reference computer" (col. 1, lines 58-61). Thus, the LRU fault data disclosed by the Aslin '919 patent is clearly distinguishable from maintenance constraints that are tail specific.

Furthermore, the Aslin '919 patent does not teach generating a flight network from information that describes a possible flight of an aircraft, where the flight network represents an airline schedule for a particular aircraft (i.e., aircraft 1 to fly from DFW to CLT to CHI and aircraft 2 to fly from DFW to LAW to DFW). The Aslin '919 patent is primarily concerned with

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aiding flight crew and maintenance personnel in maintenance procedures by isolating faults to determine particular components that need repaired or replaced. As such, the Aslin '919 patent discloses the collection of fault data for maintenance purposes but does not generate a flight network, as defined by the claimed invention.

In addition, the Onken '744 patent automatically creates revised flight plans to supply to the FMS, but the Onken '744 patent does not disclose generating the revised flight plan by generating a flight network from information that describes a possible flight of an aircraft, where the flight network represents a flight schedule for the aircraft. Although the Onken '744 patent may create the revised flight plan by using a search-and-selection procedure to search for the most favorable flight path from a starting point to a destination point by expanding the flight path by new path elements that are selected according to certain criteria, such as allowing segments of standard routes (not only direct connections between two path points) and/or planning the route to a fixed final approach point (not directly to the runway of the target airport), the Onken '744 patent does not generate the revised flight plan by generating a flight network that represents a schedule for the aircraft that takes into account tail-specific information, such as maintenance and operational constraints for a particular aircraft, as recited by independent Claims 29 and 35.

Since the Aslin '919 and Onken '744 patents each fail to teach or suggest generating a flight network from information that describes a possible flight of an aircraft, any combination likewise fails to teach or suggest the same. Therefore, Applicants submit that the rejection of independent Claims 29 and 35, and those claims that depend therefrom, under 35 U.S.C. § 103(a) is overcome.

For at least the foregoing reasons, Applicants respectfully request that the rejections be reversed and that a Notice of Allowance be issued.